

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
SHIGEKI NAKATSUKASA ET AL : ATTN: APPLICATION DIVISION
SERIAL NO: NEW APPLICATION :
FILED: HERewith :
FOR: RESIN COMPOSITION AND :
MULTILAYERED STRUCTURE

PRELIMINARY AMENDMENT

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

Prior to examination on the merits, please amend the above-identified application as follows:

IN THE CLAIMS

Please cancel all the claims and replace with the following new Claims 21-48:

21. (New) A resin composition which comprises a copolymer (A) comprising ethylene as a major component produced by using a single-site catalyst, and an ethylene-vinyl alcohol copolymer (B) having an ethylene content of 20 to 60 mol% and a degree of hydrolysis of 95% or above, wherein the ethylene-vinyl alcohol copolymer (B) contains a boron compound in an amount of 20 to 2000 ppm in terms of boron,

said resin composition satisfying the following equation (1):

$$1/99 \leq \{\text{weight of (A)}\} / \{\text{weight of (B)}\} \leq 99/1 \quad (1).$$

22. (New) The resin composition as claimed in Claim 21, wherein the copolymer (A) is an ethylene- α -olefin copolymer in which the α -olefin has 3 to 8 carbon atoms.

23. (New) The resin composition as claimed in Claim 21, wherein the copolymer (A) is an ethylene- α -olefin copolymer in which the α -olefin has an ethylene content of 50 wt.% or more.

24. (New) The resin composition as claimed in Claim 21, wherein the copolymer (A) has a molecular weight distribution (Mw/Mn) of not greater than 4.

25. (New) The resin composition as claimed in Claim 21, wherein the ethylene-vinyl alcohol copolymer (B) contains a phosphorus compound in an amount of 2 to 200 ppm in terms of phosphorus element.

26. (New) The resin composition as claimed in Claim 21, wherein the ethylene-vinyl alcohol copolymer (B) contains an alkali metal salt in an amount of 5 to 5000 ppm in terms of elemental alkali metal.

27. (New) The resin composition as claimed in Claim 21, wherein the copolymer (A) has a density of 0.90 to 0.94 g/cm³ and the resin composition further comprises a carboxylic acid-modified polyolefin (C) and satisfies the following equations (2) and (3):

$$60/40 \leq \{\text{weight of (A)}\} / \{\text{weight of (B)}\} \leq 99/1 \quad (2)$$

$$0.1/99.9 \leq X \leq 20/80 \quad (3)$$

wherein $X = \{\text{weight of (C)}\} / \{\text{total weight of (A) and (B)}\}$.

28. (New) The resin composition as claimed in Claim 27, wherein resin particles comprising the ethylene-vinyl alcohol copolymer (B) and the carboxylic acid-modified polyolefin (C) are dispersed in a matrix of the copolymer (A), and have an average particle diameter not greater than 5 μm .

29. (New) The resin composition as claimed in Claim 21, wherein a melt flow rate Ma of the copolymer (A) and a melt flow rate Mb of the ethylene-vinyl alcohol copolymer (B) satisfy the following equation (4):

$$0.05 \leq Ma/Mb \leq 5 \quad (4)$$

30. (New) The resin composition as claimed in Claim 21, which further comprises a hydrotalcite compound (D) in an amount of 0.0001 to 2% based on the total weight of (A) and (B).

31. (New) The resin composition as claimed in Claim 21, which further comprises a metal salt of higher aliphatic carboxylic acid (E) in an amount of 0.0001 to 2% based on the total weight of (A) and (B).

32. (New) A multilayered structure which comprises a layer of the resin composition as claimed in Claim 21, and a layer of an ethylene-vinyl alcohol copolymer having an ethylene content of 20 to 60 mol% and a degree of hydrolysis of 95% or above.

33. (New) The multilayered structure as claimed in Claim 32, which further comprises at least one layer comprising an ethylene- α -olefin copolymer produced by using a single-site catalyst and having a density of 0.90 to 0.94 g/cm³, in which the α -olefin has 3 to 8 carbon atoms, and at least one layer comprising a carboxylic acid-modified polyolefin.

34. (New) The multilayered structure as claimed in Claim 32, which is formed by coextrusion.

35. (New) A resin composition which comprises a copolymer (A) comprising ethylene as a major component produced by using a single-site catalyst, and an ethylene-vinyl alcohol copolymer (B) having an ethylene content of 20 to 60 mol% and a degree of hydrolysis of 95% or above, said resin composition satisfying the following equation (1):

$$1/99 \leq \{\text{weight of (A)}\}/\{\text{weight of (B)}\} \leq 99/1 \quad (1)$$

36. (New) The resin composition as claimed in Claim 35, wherein the copolymer (A) is an ethylene- α -olefin copolymer in which the α -olefin has 3 to 8 carbon atoms.

37. (New) The resin composition as claimed in Claim 35, wherein the copolymer (A) is an ethylene- α -olefin copolymer in which the α -olefin has an ethylene content of 50 wt.% or more.

38. (New) The resin composition as claimed in Claim 35, wherein the copolymer (A) has a molecular weight distribution (Mw/Mn) of not greater than 4.

39. (New) The resin composition as claimed in Claim 35, wherein the ethylene-vinyl alcohol copolymer (B) contains a phosphorus compound in an amount of 2 to 200 ppm in terms of phosphorus element.

40. (New) The resin composition as claimed in Claim 35, wherein the ethylene-vinyl alcohol copolymer (B) contains an alkali metal salt in an amount of 5 to 5000 ppm in terms of elemental alkali metal.

41. (New) The resin composition as claimed in Claim 35, wherein the copolymer (A) has a density of 0.90 to 0.94 g/cm³ and the resin composition further comprises a carboxylic acid-modified polyolefin (C) and satisfies the following equations (2) and (3):

$$60/40 \leq \{\text{weight of (A)}\}/\{\text{weight of (B)}\} \leq 99/1 \quad (2)$$

$$0.1/99.9 \leq X \leq 20/80 \quad (3)$$

wherein $X = \{\text{weight of (C)}\}/\{\text{total weight of (A) and (B)}\}$.

42. (New) The resin composition as claimed in Claim 41, wherein resin particles comprising the ethylene-vinyl alcohol copolymer (B) and the carboxylic acid-modified polyolefin (C) are dispersed in a matrix of the copolymer (A), and have an average particle diameter not greater than 5 μm .

43. (New) The resin composition as claimed in Claim 35, wherein a melt flow rate Ma of the copolymer (A) and a melt flow rate Mb of the ethylene-vinyl alcohol copolymer (B) satisfy the following equation (4):

$$0.05 \leq Ma/Mb \leq 5 \quad (4)$$

44. (New) The resin composition as claimed in Claim 35, which further comprises a hydrotalcite compound (D) in an amount of 0.0001 to 2% based on the total weight of (A) and (B).

45. (New) The resin composition as claimed in Claim 35, which further comprises a metal salt of higher aliphatic carboxylic acid (E) in an amount of 0.0001 to 2% based on the total weight of (A) and (B).

46. (New) A multilayered structure which comprises a layer of the resin composition as claimed in Claim 35, and a layer of an ethylene-vinyl alcohol copolymer having an ethylene content of 20 to 60 mol% and a degree of hydrolysis of 95% or above.

47. (New) The multilayered structure as claimed in Claim 46, which further comprises at least one layer comprising an ethylene- α -olefin copolymer produced by using a single-site catalyst and having a density of 0.90 to 0.94 g/cm³, in which the α -olefin has 3 to 8 carbon atoms, and at least one layer comprising a carboxylic acid-modified polyolefin.

48. (New) The multilayered structure as claimed in Claim 46, which is formed by coextrusion.

DISCUSSION OF THE AMENDMENT

All of the claims have been cancelled and replaced with new Claims 21-48. Claims 21-34 all require the presence of a boron compound, as supported in the specification at page 16, lines 10-16. These claims are otherwise supported by the original claims, except that

Claim 23 is supported at page 9, lines 14-18 and Claim 26 is supported at page 17, lines 20-25. Claims 35-48 are supported by the original claims, except that Claim 37 is supported at page 9, lines 14-18, and Claim 40 is supported at page 17, lines 20-25.


No new matter has been added by the above amendment. Claims 21-48 are now pending in the application.

REMARKS

The application is now ripe for examination on the merits. An early examination is respectfully solicited.

Respectfully submitted,

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| Serial No: <u> </u> |
| <u>New App</u> |
| Amendment Filed on: <u> </u> |
| <u>Herein</u> |

IN THE CLAIMS

Claims 1-20 (Cancelled).

Claims 21-48 (New).